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Defining the Role of College Professor: John Mason Young and the Early Years of the College of Hawaii

JOHN MASON AND ANNE YOUNG arrived in Honolulu on the steamship *Alameida* just before the start of the first regular session of the newly conceived College of Agriculture and Mechanic Arts.¹ Young had accepted a professorship to develop engineering training at the new college. The year was 1908 and Hawai'i, although it had been a Territory of the United States for nearly ten years, would have seemed an uncommonly exotic and remote destination. Welcomed by a colorful ensemble of Hawaiian musicians and dancers, the Youngs entered a world quite removed from the bustling industrialism they had left on the East Coast, but nevertheless one in great need of the engineering expertise that Young had acquired.

The Youngs were met dockside by the College of Hawaii's president, Dr. John Gilmore, who escorted them to Mrs. Gray's boarding

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house on King Street.² President Gilmore immediately took Young to the site of the future campus in Mānoa Valley, where Young found land awash in thick mud deposited by the Mānoa stream during heavy rains. There were rocks everywhere, remnants of tidy walls constructed by farmers. Kiawe trees contributed to the site's impassability. There was not one building. Annie Young remembered it as "wild country."³ Dr. Gilmore desperately needed Young, now his College Engineer as well as his professor of engineering, to devise a drainage system.

The College of Hawaii was a product of the land-grant system, which promoted the idea that an American college should deliver practical knowledge. Land-grant institutions were intended to provide knowledge and technical expertise to help states [and territories] solve local problems. A graduate of one of the great land-grant schools of his day, Dr. Gilmore was an eloquent spokesman for this role that the college would play in Hawai'i.

But, even so, could Dr. Gilmore have imagined the many ways that the 33 year old engineer would contribute to the emergence of Hawai'i as an important agricultural, commercial, and military asset of the



Faculty of the College of Agriculture and Mechanic Arts in 1909. John Mason Young is seated third from the right in the middle row and President John W. Gilmore is in the top row seated farthest to the right. Professor Arthur R. Keller is in the middle row seated second from the left. University of Hawai'i yearbook (*Ka Palapala*), 1937.

U.S. in the Pacific region. Viewing his move to Hawai'i as something of a lark,⁴ John himself could have had little inkling that he would enable generations of island youth to escape the plantations for professional life, design awesome bridges to facilitate the sugar industry, and construct state-of-the-art theaters and corporate headquarters.

Engineering was a developing field in 1908 with multiple avenues of entry. Although it was common for engineers to receive their training on the job, the 19th century had produced a formal system of engineering education in which scientific principles were applied to everyday problems. One of the underlying goals of the land-grant system was to expand this educational approach. Young's own training had started in the field and moved into the classroom. This combination would have made him a rare commodity in Hawai'i, where the majority of men doing engineering work had learned from experience alone.

Young had considerably more practical than academic experience when he arrived in Hawai'i. Perhaps because people recognized the breadth of his expertise, perhaps because of his achievements in designing bridges and buildings, he quickly became a practicing engineer in the community. He had formed a private business within a year of his arrival.

The role of college professor, like that of the engineer, was also being redefined at this time. The older view that the teacher is scholar/philosopher was being challenged by a scientific and pragmatic approach. Schools like Cornell and the Universities of Wisconsin and Kansas were leading the land-grant charge to promote practical applications of knowledge. During the early years of the College of Hawaii, John Mason Young pushed the boundaries of what it meant to be a professor. There were three situations that challenged President Gilmore and the regents. The first involved the question of whether a faculty member could work outside the campus. The other two grew out of the arrangements surrounding the construction of the first permanent building on campus. Young obtained architectural plans for the building in a manner appropriate to the engineering profession's protocol, but not collegial. Thirdly, there was the issue of whether the college could award a contract to a faculty member's private business. Young's self-definition ultimately prevailed. He survived the founders of the college, the last of the original faculty to leave. This paper

surveys his story in those early days, when Young juggled academic responsibilities, public service, and a private business.

HAWAI'I'S NEED FOR ENGINEERING EXPERTISE

The Youngs would have seen little to impress them on their drive to Mrs. Gray's boarding house. The port and business district were unattractive. The "sickly smell of sugar" hung in the air.⁵ Most downtown buildings were wooden structures. Streets were dirt and pedestrians trudged through mud or dust.

The geography and isolation of Hawai'i posed serious problems for agriculture, the military, urban development, and infrastructure.⁶ Sugar production required 500 gallons of water for every pound of sugar processed, yet the water sources were located across rugged mountains far from the fertile fields. The first efforts in water management for sugar production had been planned and carried out by planters like Henry P. Baldwin, who lacked formal technological training, but before long the planters were bringing in professional engineers, such as the Irish Michael M. S. O'Shaughnessy, to create vast irrigation systems. Professional scientific methods were replacing traditional craft techniques.⁷

The military also faced technical challenges.⁸ From headquarters at Fort Shafter, the Army planned a string of bases to protect Honolulu harbor, while the Navy wanted a base at Pearl Harbor. The projected facilities at Pearl Harbor involved extensive and difficult engineering projects: the dredging of the harbor opening, creation of a direct channel, and construction of dry docks and other support facilities.

Although the building boom that followed annexation had slowed by the time Young arrived, residential neighborhoods were pushing beyond the central city into the mountain valleys.⁹ Churches, schools, and other public institutions were springing up. The territorial government was building roads, water works, and other infrastructure. In 1909, the *Pacific Commercial Advertiser* pointed to the increasing tendency to have architect designed buildings, a trend that the paper clearly saw as progress.

One of the pressing urban problems was the lack of construction standards. In 1898 the bulk of downtown businesses had been in wooden structures. The Chinatown fire of 1900 had sent a shock wave,

alarming city fathers on the need for fire prevention. Public safety in theaters was also a concern. Young would have noticed that the new businesses were being built of concrete. Whether concrete that was adequate in Chicago was suitable in tropical Honolulu required scientific examination.

Engineering knowledge was key to nearly every improvement that the territorial leadership sought. The technological explosion in materials, methods, and machinery had to be adapted to the tropical climate and unique geological and topographic nature of the Hawaiian Islands. Aware of the benefits that technological innovation were bringing to Europe and the U. S. mainland, territorial entrepreneurs sought people, ideas, and machines to similarly benefit the islands. Some of the men who were thinking about Hawai'i's future believed that a college could contribute to this process.

THE ESTABLISHMENT OF THE COLLEGE OF HAWAII

In 1905 enterprising territorial legislators, spurred on by Wallace Rider Farrington, began investigating Federal legislation in support of institutions of higher education.¹⁰ They envisioned a school to train local men and women for work in agriculture and industry. On March 25, 1907 they passed the Acts that created the College of Hawaii. The development of an engineering program was a high priority, as evidenced by the name given to the proposed institution: The College of Agriculture and Mechanic Arts of Hawaii.¹¹

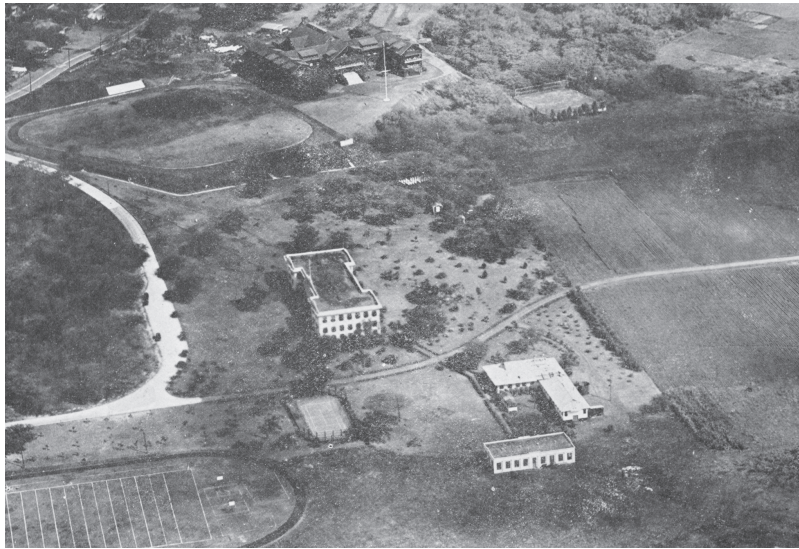
As an American territory, Hawai'i was able to take advantage of benefits that Congress had made available to the states. The federal authority for the College of Hawaii was the Morrill Act of 1862, popularly known as the Land-grant Act. The Morrill Act gave each state and territory public lands to be used for higher education. Proceeds from sale of these lands were to become an endowment to be used for instruction and equipment in agriculture and mechanic arts, English, mathematics, economics, and the physical and natural sciences. The emphasis was on pragmatic education that was relevant to local conditions. By fiscal year 1908, the college administration had obtained \$30,000 in federal funding.¹²

The college founders understood the role that engineering would play in the growth of the territory.¹³ Two of the original five Board

of Regents were engineers. Marston Campbell was a civil engineer. Alonzo Gartley, a U.S. Naval Academy graduate who became manager of the Hawaiian Electric Company, had engineered irrigation projects when he first came to Hawai'i.

The Board of Regents searched nationwide for leadership, appointing Gartley and Ralph Hosmer to make inquiries. These inquiries took them to Cornell University, a pioneering land-grant college, whose president Jacob Gould Schurman, was one of the most effective university leaders in the United States.¹⁴ Despite his classical European training in philosophy, Schurman was attuned to the needs of industrial America and was leading Cornell into the forefront of educational institutions that were crafting a practical curriculum geared toward children of the working class. He was instrumental in winning state financial support for Cornell's agricultural college. He promoted professional education in engineering and medicine.

President Schurman cabled the name of John W. Gilmore to Gartley and Hosmer.¹⁵ He knew that Gilmore, a Cornell alumnus who was



An Aerial View of the College of Hawaii Campus in 1916. The three-story white building in the center of the photograph was called the Main Building when John Mason Young first worked on its design. It is now known as Hawaii Hall. University of Hawai'i yearbook (*Ka Palapala*), 1937.

a professor of agriculture at the State Agricultural College of Pennsylvania, had a background eminently suitable to Hawai'i. Gilmore was passionately devoted to the ideals of the land-grant university. He had taught in China and Honolulu, had advised the Commission of Agriculture in India, and had conducted research in the Philippines. His academic specialty was tropical agriculture. Schurman met personally with the regents in Washington D.C. and assured Gilmore, "I see no reason why you should not make a success of the College, and I believe you will."¹⁶ Gilmore accepted the position of president in late May 1908.

YOUNG JOINS THE COLLEGE OF HAWAII FACULTY

With the first regular session of the college slated to begin in September, Gilmore immediately began looking for faculty. He approached Young, a Cornell alumnus working as an assistant structural engineer at Westinghouse, Church, Kerr, and Company in New York City. Young had academic experience, having taught at the University of Florida and Sibley College at Cornell.¹⁷

This interview, in retrospect, was fortuitous. It would provide Young with a career that would allow him to use the many talents he had been developing. It would also provide the fledgling college with a gifted faculty member to develop a program that the college founders valued.

Gilmore's interview with Young must have been an exercise in persuasion, for Young reportedly had an offer to join the Stanford faculty.¹⁸ Gilmore and Young shared a Southern background. Gilmore undoubtedly brought up the Cornell spirit that had imbued both men with the emerging view of education as a practical tool. His experience in Honolulu and the Far East enabled him to assure Young regarding the potential of Hawai'i's many young people of Asian heritage. He must have painted a vibrant picture of Hawai'i and its nascent college, for Gilmore convinced Young of the opportunities for training a cadre of engineers to build irrigation ditches, roads and railroads; modern factories, offices, schools, and homes; and any other structures needed to further the progress of the Territory.

At the same time, Gilmore undoubtedly realized that the youthful Young would be a valuable asset to a land-grant college dedicated

to training students to fit into the industrial world. Gilmore invited Young to come to Hawai'i on a joint appointment as Professor of Engineering and College Engineer, at a salary of \$2,500.¹⁹ When Gilmore made the offer, Mrs. Young was visiting her family in Pittsburgh. John Mason called and asked her, "We have an invitation to go to Hawaii. Do you want to go?" "Yes," was her reply.²⁰

It was fortunate that Young was an optimist. Otherwise he might have had second thoughts about choosing Hawai'i over Stanford. He found a school projected for a muddy, rock-filled field somewhat remote from the city, with few qualified students, little public support, and insufficient territorial funding. Hawai'i's pioneers of higher education were facing the same problems that many mainland schools had encountered years earlier.²¹

Young threw himself into his many responsibilities. He designed a curriculum for Mechanical, Electrical, and Civil Engineering that the faculty adopted on September 9, 1908.²² Young's curriculum was typical for his day, offering a combination of theoretical study, practical training, and experimental testing of new materials and techniques.²³ Students in all three fields took the same courses for the first two years: English, mathematics, chemistry, and physics. In accordance with the prevailing engineering curriculum, the humanities were considered essential to the effective functioning of a professional engineer in society.²⁴ After basic work in drawing and shop, students picked up technical subjects in the upper class years. Civil Engineering became a separate cluster in the third year. Electrical Engineering students were to receive appropriate laboratory and practical experience in their senior year. Course content emphasized practical experience in skills needed by a professional engineer. There were courses specially suited to Hawai'i's needs in construction of machines for processing sugar and irrigation facilities.

Morrill Act funding enabled Gilmore and Young to acquire state-of-the-art equipment.²⁵ The Board of Regents fully supported their efforts. When considering a proposal to purchase the Reihle Universal Testing Machine, Regent Campbell amended the specifications, increasing its strength by 50 percent to 150,000 pounds and increasing the budget accordingly. This machine garnered much publicity for the college and was used to test construction materials for local

companies and the military. By 1909 the value of the engineering equipment was \$32,969.66 or nearly twice that of the second place Botany Department. Gilmore reported to the Board of Regents that student morale improved after the installation of the new equipment and he predicted a more productive year in the classroom.

Obtaining 68 acres in Mānoa Valley had been one of the first accomplishments of the college's Board of Regents, but the Morrill Act would not cover building costs. The initial territorial appropriation of \$10,000 was insufficient to create a viable campus.²⁶ The regents had obtained space for a temporary site on property where a high school was being constructed between Young and Beretania Streets on Thomas Square. They arranged to convert the former Maertens residence on this site into classrooms. The Department of Public Works designed a 15 room temporary structure. As College Engineer, Young worked with Gilmore to prepare this interim campus.

College leaders consistently emphasized the need for adequate facilities, not only at the prospective Mānoa campus, but also at the temporary site.²⁷ The Board of Regent's 1909 report to the legislature devoted much space to needs of the engineering program, particularly for a building to house the equipment purchased with Morrill Act funding. The board managed to set aside \$2,000 for a structure for pattern making and forging at the temporary site that eventually could be moved to Mānoa. The building was completed by the 1909 fall term. In its 1911 report, the board assured the legislature that the workshop had greatly improved engineering instruction at the college through training for use of a broad range of contemporary materials and exposure to a variety of construction methods.

Young's appointment as College Engineer placed him at Gilmore's right hand in providing suitable facilities. His biggest responsibility involved the planning of the campus at Mānoa. This ambitious 1909 plan attests to the expansive vision that the college founders had for their territorial college. He placed 24 buildings around a rectangular mall in the popular Neoclassical style of the day.²⁸ Buildings were projected for disciplines ranging from the humanities to the social sciences, physical sciences, and professions of engineering, agriculture, medicine, architecture, and law. A gymnasium, library, museum, track field, chapel, and YMCA were included to ensure student well-being.

Shops and laboratory facilities would expedite research and practical instruction. Although details vary, the Mall which runs through the center of the present-day campus bears a strong resemblance to Young's original plan.

By August 1909 President Gilmore was asking the Board of Regents for a second engineering instructor.²⁹ He found another Cornell graduate, Arthur R. Keller, experienced in railway construction, reclamation work, and office management. Young knew Keller and endorsed his appointment. Keller joined the engineering faculty in 1910. He became a popular teacher and carried out many public service engineering projects that helped build public support for the college.

Just as Cornell and other mainland land-grant institutions had experienced decades earlier, the College of Hawaii had difficulty attracting qualified students.³⁰ Many of the wealthy and influential families in the Islands were not interested in sending their children to a local college. They had their eyes on mainland schools, especially Stanford, Harvard, and Yale.

Local public high schools did not provide adequate college preparatory training for engineering, where the prerequisites included competence in the physical sciences, mathematics, solid geometry, and plane trigonometry.³¹ Another barrier was the fact that agricultural and working families did not see the need for their children to attend college. When the first full semester began in September 1908 there were only five regular students. The college was known as the "school with more teachers than students."³²

Despite these problems, Young was enthusiastic about the future of the College of Hawaii from his arrival in the islands. After several faculty resigned in disgust in 1909, Young commented to his wife, "Now isn't that ridiculous? The college will be a great University some day—it just can't help being one even if it wanted to, with its geographical location and opportunities."³³ Ever a promoter of the school, he once convinced a man who rode downtown with him to send his son to the college. "I didn't know it was so worthwhile," remarked his passenger.³⁴

Young helped Gilmore and the faculty mount an energetic campaign to overcome the physical, financial, and public relations problems. The faculty organized courses for special students. Faculty meet-

ings routinely considered requests to accommodate students who lacked certain requirements. Young gave a lecture to teachers on the topic of school architecture as part of a series of lectures aimed at special interest groups, such as farmers, homemakers, and teachers.³⁵ Gilmore and Young gave extension lectures on Maui and Hawai'i in the summer of 1909.

AN ACADEMIC OR A BUSINESS MAN?

Gilmore had convinced Young about the opportunities that Hawai'i offered in academic development, but he may not have foreseen another very attractive feature to Young: the potential for an engineer to practice his craft. Although Young was a youthful 33 when he arrived in Hawai'i, he had already worked in engineering more than half of his life.

Young's strong family background in religion and education ingrained in him a belief in higher education, a capability for hard work, and a commitment to public service. He had been born into a long line of Presbyterian ministers and teachers, descendants of Scotch English Presbyterians who had come to North America in 1754 seeking religious freedom.³⁶ His grandfather, John N. Young, taught mathematics and natural philosophy at Erskine College from its founding in 1839 to 1881.³⁷ Erskine College, established by the Associate Reformed Presbyterian Church, was the first church-related college in South Carolina. The Young family remained closely associated with Erskine for generations as it developed into a leading educational and cultural institution in the region.

Young's father, Charles Strong Young, an Erskine graduate and former Confederate soldier, was serving in Tennessee when John Mason was born on September 26, 1874. His wife, May B. Chalmers was also from a family of ministers and teachers. Charles Young did missionary work, founding congregations in Tennessee, Kentucky, and Florida. He was county Superintendent of Schools in Florida. He was characterized as "a Christian gentleman of staunchest character, remarkable for his intelligence and for the wide range of his information. Wherever he went, or whomsoever his life touched, it was to uplift. It was a benefit to know him and to talk with him."³⁸ Testimony in later years

from John Mason's associates in Hawai'i confirms that Charles Young passed these traits along to his son.³⁹

In Charles Young's time, the clergy were losing influence. The Presbyterian Church, among others, had been challenged by the anticlerical, populist revival movement of the early 19th century.⁴⁰ After the Civil War, the moral authority of church leaders was further eroded by the emerging emphasis on scientific knowledge. The Young family was so poor that John started working at 14. John's widow Annie asserted that "Nobody ever gave him five cents for his education . . . John's father had five children so anything John got, he earned."⁴¹ Under these circumstances, the clerical profession was not attractive.

In selecting engineering as his career, John Mason Young chose a profession that allowed him to apply his love of mathematics, inherited from his grandfather, in a socially constructive manner. Engineering required an intellectual outlook and scientific approach. Engineers believed that the efficiency, mechanization, and standardization provided by technology would create more comfortable life styles. They saw themselves as leaders in a movement to advance civilization, not only materially but also intellectually and culturally. Engineering was joining the clergy, law, and medicine as a field that promoted social welfare. Many young men who chose engineering came from clerical families and believed in Christian values of public service for the betterment of humanity.⁴²

Young and the engineering profession grew up together. Like most of his peers, Young's initial knowledge of engineering came on-the-job.⁴³ For eight years he gained practical experience and absorbed technical knowledge. Starting as an apprentice in a machine shop in Charleston, South Carolina, he moved up to journeyman machinist in the phosphate and turpentine industry. Intelligent, knowledgeable, and ambitious, he aspired to greater responsibility but his youthfulness was obvious. He grew a beard. This stratagem worked, because he was hired as superintendent of a phosphate mining company at Dunnellen, Florida, before he was even 20 years old. In 1893, he became master mechanic and superintendent of construction of the Hamburg Phosphate Company and later superintendent of the Phosphate Mining Company at Anita, Florida.

When he was 22 in 1896, Young decided to supplement his practi-

cal education with academics. He entered the University of Florida in Gainesville, a land-grant institution. By studying every day for 52 weeks a year, he graduated in only two years with a Bachelor of Science degree.

The year 1898 not only saw the United States annexing Hawai'i, but took the country into a war against Spain with campaigns in Puerto Rico, Cuba, and the Philippines.⁴⁴ Unprepared in either manpower or technical capacity, the War Department urgently sought volunteers and assembled an unprecedented array of ships and military material. Florida was the staging ground for the Caribbean front. Young signed on with the Navy as Master Machinist 1st class at the U.S. Naval Station in Key West. The short-lived war against Spain gave Young some experience of military engineering that would later be useful to him in Hawai'i.

Young was next hired by the University of Florida as professor of mechanical engineering and chairman of the physics department. His salary of \$1200 seemed lavish when compared with the \$2 a day wage that a skilled worker could expect. He was 24 years old.

Young realized that he would remain a provincial player on the fringes of engineering unless he expanded his knowledge and experience. He decided that Cornell University was the place to start. Moving to Ithaca in 1901, he entered Cornell as a senior, studied physics and electrical engineering, and received his M.E. degree the following year.⁴⁵ Young continued in the graduate program at Cornell in civil and electrical engineering. At the same time he taught experimental engineering at Sibley College, Cornell. Young was awarded a Masters in Mechanical Engineering in 1904.

Despite his remarkable capacity for work, Young enjoyed socializing with his fellow students. While at Cornell, he demonstrated leadership skills and community involvement by joining a three member committee to plan student activities. One of the other members was a scholarship transfer student in psychology and ethics from Pennsylvania College for Women, Anne D. Montgomery. Part of the job, which Mrs. Young later called "the worst," was to organize dances for the graduate students.⁴⁶ It was by way of Strauss waltzes, polkas, and schottisches that Young came to know the love of his life. He later joked, "I knew I had to marry [her]! That poor creature. She can't

add two and two. Sometimes she gets four and sometimes she gets five and sometimes she gets three. I knew that poor girl would starve if I didn't marry her. I had to keep her alive because she can't add."⁴⁷ The couple was engaged within a year. They married in Pittsburgh on October 23, 1905.

With his practical experience and professional training, Young was well qualified to design bridges and industrial facilities, to build businesses and homes, and carry out other construction projects. It is not surprising that he gravitated toward work with the private sector after he moved to Hawai'i.

YOUNG FOUNDS A PRIVATE BUSINESS: PACIFIC ENGINEERING

Young's role as College Engineer put him in touch with businessmen and government officials who were carrying on the business of construction and development. He worked with staff at the Department of Public Works who designed the engineering workshop at Young street.⁴⁸ At the Young street site, he became acquainted with William G. Chalmers, who had won the bid to construct the high school, named after President McKinley, for \$5,252. It was an important contract for the young builder, the son of George Chalmers Sr., a Scotsman who managed the Waimanalo Sugar Plantation. Designed by H.L. Kerr, a leading local architect, this first public high school in Hawai'i was a jewel, constructed from hollow concrete blocks to simulate Hawaiian blue-stone. Undoubtedly, Young would have closely observed this building as it arose.

Young began accepting personal commissions for building projects, through which he developed working relationships with important island architects, corporate officers, and men of wealth. He designed a concrete cover at the Makiki Reservoir for the Department of Public Works in January 1909.⁴⁹ He collaborated with William Chalmers in construction of the first comfortable, modern movie theater in Hawai'i, another H.L. Kerr design. The 930 seat Empire Theater, located at the corner of Bethel and Hotel Streets, was a reinforced concrete structure that cost \$25,000 by its completion in May 1909. A ventilation system that circulated the air underneath the tin roof cooled the theater. One third of the interior side lights were covered

with green globes that were kept lit to provide visibility for patrons entering and exiting during screenings. These up-to-date features required engineering expertise that the Cornell trained Young was well qualified to provide.

In November 1909, only a year after the Youngs had moved to Hawai'i, Young and Chalmers formalized their relationship by incorporating the Pacific Engineering Company, Ltd.⁵⁰ Young was the secretary and treasurer. The other board members came from his community contacts: the president was Walter E. Wall, the territorial surveyor responsible for highways, public land subdivisions, and tax assessment surveys; the vice-president was G. Fred Bush, sales manager of Honolulu Iron Works; the lawyer Alexander Lindsay Jr., and Chalmers were also board members.⁵¹ On paper, Chalmers provided tools, the office facility, and equipment, while Young contributed tools, office furniture, and a reference library of books. The scope of the corporation included construction of commercial and residential buildings, earthworks, waterworks and hydraulic systems, piers, wharfs, docks, and land reclamation.

In operation, Young provided administration and design while Chalmers supervised day to day onsite activities. The first project carried out by Pacific Engineering was the U.S. Experimental Station Office for the Department of Public Works.⁵² January 1910 found Young working on plans for a shed at the Standard Oil Company. He also worked on a proposal for an elevator for the military.

As part of his growing involvement in the community, Young became active in social and fraternal organizations. He joined the Masonic order, eventually becoming a bastion of the Shriners in Honolulu. He attended gala dinners organized for charitable and social causes.⁵³ In February 1912 he sat at the southern table at a lavish "harmony banquet" attended by 350 men from around the Pacific Basin to promote good will among the nations of the Pacific. One of his table mates was another South Carolinian, Alexander Hume Ford, an organizer of this event and the ensuing Pan-Pacific Union, of which Young became a member. Only a week before this, Young and Annie had danced the night away at the major social event of the season, the University Club Ball.

Young's participation in these community organizations and func-

tions brought visibility to the college. But for the college, these social activities were something of a two-edged sword. Young was also making valuable contacts for Pacific Engineering and its business.

Pacific Engineering began to win major construction bids. In 1910 the firm built the downtown YMCA at the corner of Hotel and Alakea Streets designed by the architectural partnership of Clinton Briggs Ripley and Arthur Reynolds.⁵⁴ These distinguished designers were responsible, singly and as a partnership, for such important structures in Honolulu as Pauahi Hall at Oahu College. Funded by donations totaling \$195,000, the neoclassical style YMCA was constructed of reinforced concrete. Its facilities included two bowling alleys, a handball court with spectators' gallery, expansive lobby, a 200 seat auditorium, music and games rooms, and a roof garden.

Other projects from this period included a home for Mrs. Lora T. Keller and the parsonage for St. Andrews Cathedral.⁵⁵ Since planning often took place over a period of years, Young frequently worked on blueprints and drawings for buildings that were not completed until several years later. For example, 1911 found Young working on drawings for the landmark Blaisdell Hotel. Marshall H. Webb, an engineer turned architect, designed this building for the prominent businessman, Charles M. Cooke.⁵⁶ The four story reinforced concrete structure was built during 1912 and finally opened in 1913.

The most challenging of Young's commissions came on the Big Island.⁵⁷ He designed a series of bridges along the Hilo-Hāmākua coast as part of the Hilo Railroad expansion north through sugar cane country. This ambitious project reflected the optimism of the business oligarchy in Hawai'i following annexation. Benjamin F. Dillingham wanted to facilitate the shipment of sugar cane along the Hāmākua coast. Although one-fourth of the islands' sugar crop was grown in this region, transportation facilities were poor. Rainy weather obliterated the wagon road. The alternative was a derrick and cable system that passed the cane down from bluffs as high as 300 feet into boats bobbing in the ocean.

Dillingham spearheaded a remarkable project to build a railroad north from Hilo. The Hilo Railroad Company, in partnership with the Olaa Sugar Company, persuaded the U.S. Congress to fund construction of a breakwater in Hilo to enable large oceangoing freighters to load cane. The Corps of Engineers began building it in 1908. The

Hilo Railroad Company, in turn, was responsible for building a wharf and extending the line to the north. At a cost \$106,173 per mile, this was one of the most costly per-mile railway construction projects in the United States. Financial difficulties forced the railroad company to build it in stages between 1909 and 1913. Problems with labor, procurement, and cost of materials contributed to the enormity of this project. The first phase was a 12 and seven-tenths mile track from Hilo to Hakalau, followed by a 21 mile stretch to Pa'auilo.

Construction equipment and techniques came from the mainland railway industry.⁵⁸ The territory covered, however, was unusually challenging. The Hāmākua extension, as it became known, was built around the base of Mauna Kea above cliffs that plummeted 50 to 300 feet into the ocean. At one point, the line ran for 4,000 feet along the top of a 200-foot perpendicular ridge. Numerous ravines and canyons, products of erosion from 200 inches per year rainfall on an already steep landscape, intersected the route. The nearly 34 mile bed provided 211 openings for water to escape into the ocean.



A Steel Railway Bridge Built along the Hilo-Hāmākua Coast in the Early 20th Century. Hawaiian Historical Society.

Some openings were concrete culverts, but there were also bridges. These were designed by Young, who had designed railroad facilities on the mainland before joining academia. These included a coal hoisting tower in Long Island City (1905), a substation for the Long Island Railroad (1906), and the Beaver Creek Viaduct for the Ohio River Passenger Railway Company (1907). But those projects were simple in comparison to the daunting circumstances of the Hāmākua extension. Young's son-in-law considered those bridges to be among Young's "greatest achievements."⁵⁹

Young worked on the project from 1910 to 1912. There were a total of fourteen steel bridges, 500 feet and longer and over 100 feet tall. The longest was 1,006 feet long and 230 feet high. Twice the road bed veered back along the ravines for a half mile, where the bed crossed the ravines on curving high steel bridges. One bridge was a horseshoe bend and the other was an eighteen-degree hairpin curve. In all, the steel bridges covered 6,604 feet. There were also twenty-nine wooden trestles and a 384 feet long wooden bridge with reinforced concrete and steel piers. At places the bases for the bridges were below sea level, where they were relentlessly buffeted by waves. The bridges occupied two and three-tenths miles, 6.75 percent of the distance between Hilo and Paʻauilo. Young made periodic inspection trips to Hawaiʻi Island.

Pacific Engineering's early growth culminated in 1912.⁶⁰ That year the company won contracts for three buildings in the \$100,000 range. Its bid of \$93,300 secured the Brewer business block on King Street. The other two \$100,000 projects were the Cooke Estate building on Fort Street and a three story reinforced concrete headquarters for the *Pacific Commercial Advertiser* on King Street. Pacific Engineering also devoted ten months to modernizing the Bank of Hawaii offices on Fort Street, a H.L. Kerr designed project that cost almost as much as a new building. The Marshall W. Webb designed Castle Hall at Oahu College, the Punchbowl Reservoir, Pohukaina School in Kakaʻako, and a warehouse for the Theo H. Davies also came at this time. The company constructed residences for William F. MacFarlane and James Steiner, the latter a celebrated Ripley and Reynolds property overlooking Kūhiō Beach known as "Kaiona".⁶¹ The assets of Pacific Engineering had grown from \$16,160 in 1910 to \$22,830 in 1911,

and to \$63,768 in 1912. Young was doing well enough to purchase a five passenger touring car.

TENSION BETWEEN A PROFESSORSHIP AND PRIVATE BUSINESS

As a functioning professional, Young had learned administrative skills of management, organization, and supervision.⁶² Engineers not only provided technical expertise, they made logistical decisions involving schedules, labor, and procurement. This was not the academic style, which favored collegiality and adhered to a division of labor between teaching and administration. Young's dual appointment as professor and college engineer required him to carry out a balancing act between the two styles. The contrast between them surfaced during the planning of the first building at the Mānoa campus. This project exposed a fundamental contradiction between the pragmatic method of the professional engineer and academic institutional expectations. But the first issue the college faced was whether a faculty member could accept work off campus. Thus, when the College of Hawaii was still a very young institution, Young presented the Board of Regents with several challenging issues.

The Board of Regents had taken notice of Young's various outside projects. There must have been informal discussion when Pacific Engineering was organized because President Gilmore wrote to President Schurman in early January 1910, seeking advice on how to handle this situation. Schurman's thoughtful reply contained several guidelines that Gilmore and the board seem to have followed. Schurman called this "one of the embarrassing problems in the administration of technical departments."⁶³ It was common among universities, he claimed, and he was struck that the College of Hawaii had encountered the situation at such an early stage. Schurman saw it as potentially beneficial: a financial boon to the professor, yet also helpful to the school. The challenge, he wrote, is to reach a suitable balance.

Schurman personally defended the practice on grounds that the outside work keeps the professor abreast of the latest developments. Cornell however had a rule prohibiting independent work that hampers classroom instruction. Schurman found this difficult to supervise. As a solution, Cornell was offering frequent sabbatical leaves to engi-

neering faculty in recognition that it was imperative that instructors remain up to date. Cornell even paid part of the salary if necessary.

Schurman advised Gilmore that it was important to be able to “trust the judgment and conscience of your professors.”⁶⁴ He urged Gilmore to allow time for working out the situation and expressed his continued appreciation of the growth that the college was making under Gilmore’s leadership.

Despite Schurman’s tempered advice, this issue continued to rattle the board. In April 1910 the concern became public when President Cooper introduced the question of allowing faculty to accept outside work.⁶⁵ He cited Young’s Pacific Engineering projects and the Hāmākua extension bridges. No action was taken at the time, but the issue came up again in September. The board reasoned that paying salaries over ten months was a possible solution, but still didn’t take definitive action because of the precedent that federal salaries were paid over twelve months. It was resolved that the Bureau of Education in Washington should be consulted. The issue lingered.

Gilmore nevertheless expressed satisfaction with Young’s work. He annually recommended salary increases. He described Young’s service as “excellent” and pointed out that he had worked in behalf of the college over the summer of 1909. Gilmore clearly believed that Young was valuable in advancing the college.⁶⁶

Circumstances surrounding Young’s 1911 raise indicate that the Board was still troubled by Young’s private practice. Gilmore drafted a letter to Young that informed him of the raise. The letter included an admonition that college policy requires “continuous and undivided services for and in the interests of the College, [unless otherwise approved].”⁶⁷ But President Cooper instructed Gilmore not to send this letter, perhaps because the board members had decided to handle the matter privately. It is interesting to note that the business activity of Pacific Engineering fell off between 1912 and 1915, from \$27,926 to \$1,153. Had a board member persuaded Young to cut back on his outside activities?⁶⁸

MORE TENSION OVER CONSTRUCTION OF THE MAIN BUILDING

In 1911 Young was a busy man. He had been able to shed some of his teaching responsibilities with the arrival of Arthur Keller, and there

was now a shop supervisor. Nevertheless, he was teaching half of the engineering classes, ranging from Mechanical Drawing to Machine Design to Thermodynamics to Bridge Design and Concrete and Masonry Structures, among others.⁶⁹ There were academic questions for the faculty to resolve.⁷⁰ Young participated in the monthly faculty meetings, serving on a variety of committees and introducing motions to resolve the issues. In March, Young was appointed to a three member committee to compare the college's graduation requirements with those of mainland institutions. In September, it was Young who presented the report. He was often a committee's spokesperson.

Young was also drafting a set of building ordinances for Honolulu. The myriad business, school, and institutional construction projects since annexation had established the necessity to set standards. City authorities asked Young to become part of a two man team to create a building code.⁷¹ This ordinance was passed in June 1911. It outlined procedures for building permits on all construction projects. The building inspector was given authority to enforce compliance. Materials had to conform to current engineering standards. The ordinance included a long series of expectations for theaters. When builders and owners implemented the ordinance, amendments became necessary, but the basic document remained in force.⁷²

On top of all these responsibilities, the regents presented Young with a major assignment relating to the Mānoa campus, one which was to lead into procedural difficulties.⁷³ Lacking funds to implement the entire campus plan at once, the board put its efforts into securing a main building. President Gilmore proposed a building that would cost \$200,000, but the regents felt it would be unrealistic to request such a large amount from the financially-strapped legislature. They settled upon the amount of \$50,000 for construction and \$10,000 for furniture and equipment. They instructed President Gilmore to ask Young to make preliminary sketches for a building in their price range.

This was quite an expectation. It is true that Young was the College Engineer. He had enthusiastically helped with drainage problems at Mānoa, supervised preparation of the temporary campus on Young Street, and drafted a comprehensive plan at Mānoa. The plan included a preliminary design for a main building, but it is unlikely that Young had considered the actual building cost. Therefore, designing a major

building that would fit the budget was a big job. Young's salary at the time was \$2,750. Were the regents requesting too much?

Young acted with an executive authority characteristic of the professional engineer. He approached Ripley and Reynolds, the architectural firm with whom he had worked on the YMCA.⁷⁴ He gave Mr. Ripley a structural design and estimates of departmental needs for floor space. Ripley drafted preliminary plans based upon this information. Young then negotiated with Ripley for completion of the plans and specifications for the building and oversight of the construction.

Young's initiative confounded the regents because he had failed to keep President Gilmore apprised of his actions. He did advise Gilmore that an architect be retained, for Gilmore recommended this to the board on May 9, 1911. However, Young seems not to have given Gilmore the details of his negotiations with Ripley. When President Cooper met with Ripley to discuss the project, Cooper was amazed to hear Mr. Ripley claim complete ownership of the plans. The board instructed President Gilmore to clarify this issue with Young, who explained that "he felt justified under the circumstances in getting good plans in any honorable way possible without laying the College under any obligations."⁷⁵ Young assured Gilmore that he had not put the college under obligation by his action and pointed out that his actions had been completely within "methods of procedure . . . quite customary to the profession."⁷⁶

It would appear that Young had given Ripley his designs from the 1909 campus plan. Ripley's plan resembles that version, but Ripley made modifications that enhanced the character of the building. Ripley simplified the lines by eliminating numerous small insets that Young had placed in the facade. He varied the size of Young's massive lines of windows. He added columned loggias between the two wings in the front and back of the building. With a wide staircase leading up to the first floor entrance, the building took on a Classical Revival elegance.

The differences in allocations for various departments probably reflects Young's revised space estimates, but overall, Young's 1909 system was followed. The basement contained most of the laboratories. The library, administration, and liberal arts lecture rooms occupied the first floor. Home economics and more lecture rooms were on the second floor, but Young's 250-seat auditorium was eliminated. Rip-

ley increased the functionality of the building by placing stairwells in each of the wings.

The Board of Regents accepted Young's explanation. Further conflict was averted when they hired Ripley according to the arrangements Young had proposed. Ripley was hired as a faculty member and paid \$3,042, a salary equivalent to his architectural fee.⁷⁷ In addition, he agreed to complete the drawings and supervise the construction for a commission of six percent of the cost.

Another issue surfaced when the Board of Regents solicited bids for the construction of the Main Building. Pacific Engineering Company put in one of the four proposals.⁷⁸ Two proposals were eliminated immediately because of their high cost. The estimate from Pacific Engineering, however, was only \$25 more than the \$65,700 low bid of the Lord and Young Construction Company. This situation caused lively discussion, as the board considered procurement procedures and further questions regarding outside business activities by faculty members.

The Board of Regents wrestled with the question of complying with the requirements of Act 62, the territorial procurement law, which specified that contracts be awarded to the lowest "responsible" bidder. The board's first concern was that Professor Young was in conflict of interest because of his joint capacity as college employee and president of Pacific Engineering. Regent Hemenway, a respected lawyer who had replaced W.G. Smith on the board, calmed this fear. Having settled this, the regents seriously considered the possibility of awarding the contract to Pacific Engineering, despite its \$25 higher bid. The board devoted considerable time to determining whether there was any difference between the two low bidders regarding their "responsibility." They investigated the Lord and Young Company's record, but could not find any problem serious enough to merit disqualification. They asked the Attorney General for guidance. The Attorney General was Young's friend and Pacific Engineering founding board member, Alexander Lindsey. By this time, however, Mr. Lindsey had resigned from the Pacific Engineering board and no longer held stock in the company.⁷⁹ Lindsey instructed the board that any ruling to disqualify a low bid for considerations of responsibility must be based in factual evidence. On October 5, 1911, the board decided against disqualifying the Lord and Young Company and awarded it the contract.

Pacific Engineering was a mere David in contrast to the Goliath of the Lord and Young Company. In Lord and Young, the regents got one of the city's major construction companies. The company had been formed in 1910 by James L. Young and Edmund J. Lord.⁸⁰ A civil engineer and architect, James Young had supervised construction of Army facilities on O'ahu before opening his company. Young planned and constructed the first two reinforced concrete and fire-proof structures in the city. Edmund Lord came to Hawai'i in 1900 to build the sewer system. He specialized in public works, including highways, street paving, and dock facilities.

Work on the Main Building was complicated by labor problems. Thirty workers walked off the job briefly. They wanted to have Saturday afternoon off for personal matters, compressing the 48 hour work week into five and one-half days. The *Pacific Commercial Advertiser* joked that "the men want to work a nine-hour day and the boss insists on letting them work only eight."⁸¹ They also wanted their paychecks delivered to them at the Mānoa site so they would not have to go downtown to pick them up. James Young expressed sympathy to these requests, indicating that the company would adjust its procedures accordingly.

The cornerstone laying ceremony took place on a sunny day in January 1912.⁸² The site was still remote enough that the newspaper printed directions on finding it. By the end of summer the new campus was ready for occupancy.

At the start of the fall semester in 1912, Gilmore could have taken comfort from the achievement that the Mānoa campus represented. The enrollment of both special and regular new students in the college was larger than anticipated. The number of regular students had increased to 24.⁸³ If special students were included, the total number of students served was 128. The College farm was available for training in dairy, poultry and livestock; plans for horticulture were being made. A new curriculum in Sugar Technology was being developed. College outreach activities included correspondence courses, public lectures, participation in the Hawaii Poultrymen's Association and Palama Settlement Public Welfare Exhibition, and circulation of traveling libraries in cooperation with the Department of Public Instruction. The College had begun a series of technical publications with an article on Hawaiian plants by Professor Joseph F. Rock.

Young had played no insignificant role in this development. He had given extension lectures, even on Maui and Hawai'i. He had made available technical expertise to address community needs, such as the mammoth Pearl Harbor Dry Dock project, for which the College Reihle Universal Testing Machine had made tests on concrete.⁸⁴ This experiment demonstrated the contributions that college research could make to the community. Young was seated at the head table at a Commercial Club luncheon on August 9, 1912, at which Rear Admiral Stanford spoke on the complex project, which was 200 feet longer than any built to date.

In dealing with the situations that Young presented to them, Gilmore and the Board of Regents had followed President Schurman's 1910 advice. They worked the "problem out gradually." In the end, they "trust[ed Young's] judgment and conscience."⁸⁵ Young's business experience, his ability to multitask and function in an executive fashion impressed the regents. The fact that the regents tried to award the Hawaii Hall contract to Pacific Engineering shows that he had gained their confidence. Young's community involvement had taken the college into the city. This was important to the regents, as R. S. Hosmer pointed out:

Any activity of the College that brings its work to the attention of those who have an active part in keeping the machinery moving in Hawaii is good. (Board of Regents minutes, Jan 8, 1912)⁸⁶

The humane and ethical personality traits that Young's parents and religious upbringing had instilled in him stood him in good stead. Taken together with his solid engineering experience, they enabled Young to survive controversial situations and persuade critics to accept his views.

EPILOGUE

Suddenly in 1913, President Gilmore resigned to take a job as Professor of Agronomy at the University of California. There he became a popular teacher and frequently spoke to agricultural and scientific groups.⁸⁷ Turning his attention to agriculture in Latin America, he provided advice in Chile, the Dominican Republic, and Mexico.

Gilmore was not ambitious for scholarly acclaim. He was a man of thought who delighted in teaching and promoting international understanding.

One doubts that his differences with Young weighed heavily in his resignation. Gilmore's informal leadership style and the absence of a formal budget process suggest that Gilmore was not an administrator at heart. Perhaps he believed that his five years as President of the College of Hawaii had served to establish the institution, leaving him free to pursue his passion of promoting agriculture in tropical climates. And so the two Cornell men, who had cooperated in establishing a college in Hawai'i along the lines of their alma mater, went their separate ways.

Young continued to submit bids on behalf of Pacific Engineering. By 1919 they had \$102,090 in contracts.⁸⁸ In 1920 Young left full-time employment at the College and served on a half time basis until he fully retired in 1940. This arrangement left him free to carry on his Pacific Engineering business: constructing the Theo H. Davies Building and the Hawaii Theatre, remodeling the Scottish Rites Cathedral and Kawaiaha'o Church. He designed the Damon building headquarters for the First Hawaiian Bank and four buildings at the University of Hawai'i. He was president of the Honolulu Chamber of Commerce in 1930 and, in 1937, he was appointed Chairman of the Unemployment Compensation Board by Governor Poindexter.

In later days, Young relished the fact that the University had taken its place among the ranks of American colleges.⁸⁹ Talking with a reporter, he illustrated his mathematical vernacular with an impromptu graph. He showed how the school had grown, slowly at first but faster in recent years, along the same lines as colleges on the mainland.

The Youngs had viewed Hawai'i as an adventure and intended to stay only a few years.⁹⁰ Brilliant, dynamic, hardworking, and public-spirited, Young created the school's engineering program, drew plans for the Mānoa campus, and designed four campus buildings. His work extended far from the campus. Young forged a town-gown partnership through which the new college provided technological expertise. Moreover, as founder of the Pacific Engineering Company, he carried out major construction projects. A man who saw romance in

the growth of the sugar industry, Young did not leave Honolulu, but devoted his life to the development of the Hawaiian Islands.

John Mason Young exemplified the spirit of the early 20th century professor, applying the methods of modern science to solve problems in the tropical island community that he called home. Channeling much of this through his private business, Young foreshadowed the career of the 21st century professor, who often teaches part-time while conducting a vigorous private practice. By the same token, the Board of Regents showed futuristic thinking by tolerating Young's extensive private activities. Today's universities actively seek practicing professionals in engineering, medicine, and business to provide state-of-the-art instruction. John Mason Young came to a remote community and helped it to thrive in the America that he had left.

NOTES

¹ The institution has had three names. In 1911 its title was shortened to College of Hawaii. In 1920, the College became the University of Hawaii. For simplicity's sake, the institution will be called the College of Hawaii in this paper, except for occasional emphasis. Victor N. Kobayashi, editor, *Building a Rainbow: A History of the Buildings and Grounds of the University of Hawaii's Manoa Campus* (Honolulu: Hui O Students, University of Hawaii at Manoa, 1983) 3-7, 25-26.

² Mrs. John Mason Young, Oral History interview with Elizabeth Carr, typed transcription, November 26, 1966, Honolulu, University of Hawai'i Archives; Willard Wilson, "Campus, Early," Handwritten file cards on University of Hawai'i history, Willard Wilson Papers, Box 1, University of Hawai'i Archives. Mrs. Gray was a single mother raising two sons. Many of the early College of Hawaii faculty first stayed at her establishment. The Youngs only stayed with Mrs. Gray for one week. They found another "glorified" rooming house run by the Cassidy family on the beach. Eventually they found a house in the Cottage Grove district near Young Street and the temporary campus. In 1913 they purchased a home in lower Pacific Heights from Willis T. Pope, who had been the acting dean of the College prior to Dr. Gilmore's arrival. Mr. Pope had built the house by himself, including the furniture, but sold it when he and his wife moved to California. The yard was filled with trees that Mr. Pope, an agriculturalist, had planted. The Youngs remained in this house throughout their life.

³ Mrs. John Mason Young Oral History.

⁴ Author's interview with Ret. Admiral Henry Stanford Persons, Feb. 22, 1992.

⁵ William R. Castle Jr., *Hawaii Past and Present* (New York: Dodd, Mead & Company, 1920) 108.

⁶ Ray Stannard Baker, "Wonderful Hawaii: A World Experiment Station 1. How

King Sugar Rules in Hawaii," *The American Magazine* vol. 73 (November 1911) 28-38; Castle, *Hawaii Past and Present* 65-84; Carol Wilcox, *Sugar Water: Hawaii's Plantation Ditches* (Honolulu: U of Hawai'i P, 1996) 1, 45. For pineapple growers, the obstacles included perishability of the fresh fruit. Farmers were experimenting to discover whether coffee and other crops could be grown in the islands.

- ⁷ Raymond H. Merritt, *Engineering in American Society* (Lexington, KY: U P of Kentucky, 1969) 3; Wilcox, *Sugar Water*, 54, 45, 86-87.
- ⁸ George C. Perkins, "The Pacific Coast and the Orient," *The Independent*, LXII, No. 3038 (February 21, 1907) 429; Castle, *Hawaii Past and Present* 85-97; Ralph S. Kuykendall and A. Grove Day, *Hawaii: A History, from Polynesian Kingdom to American State* (Englewood Cliffs, NJ: Prentice-Hall, 1961) 210-216; Helen Gay Pratt, *Hawaii: Off-Shore Territory* (New York: Charles Scribner's Sons, 1944) 185-189; Gerrit P. Judd, *Hawaii: An Informal History* (New York: Collier Books, 1961) 126-127; Nellist, *Story of Hawaii and its Builders*, 45.
- ⁹ Rob Sandler, *Architecture in Hawai'i: A Chronological Survey* (Honolulu: Mutual Publishing, 1993) 35; *PCA*, 23 May 1909, 5.
- ¹⁰ Thornton Sherburne Hardy, *Wallace Rider Farrington* (Honolulu: Honolulu Star-Bulletin, Ltd., 1926) 74.
- ¹¹ Willis T. Pope, "The College of Agriculture and Mechanic Arts of Hawaii," *PP*, vol. 20 (September 1908) 18-20.
- ¹² Pope, *PP*, 18.
- ¹³ David Kittelson, "History of the College of Hawaii," Master's thesis (September 1966) University of Hawai'i Archives; Nellist, *Story of Hawaii and its Builders*, 105-107. This is not meant to obscure the fact that a primary objective of the College of Hawaii was to promote agriculture in a scientific way. Because John Mason Young was an engineer, this paper focuses on the important corollary objective of providing expertise and education in engineering.
- ¹⁴ Charles B.P. Young, (compiler), *Cornell in Pictures: 1868-1954* (Ithaca, NY: Cornell U P, 1954) 38-72; "Jacob Gould Schurman," *LoveToKnow 1911 Online Encyclopedia*, http://www.1911encyclopedia.org/Jacob_Gould_Schurman (accessed August 2008); Kobayashi, *Building a Rainbow*, 4.
- ¹⁵ J.S. Schurman, letter to J.W. Gilmore, May 8, 1908, Jacob Gould Schurman Papers, Division of Rare and Manuscript Collections, Carl A. Kroch Library, Cornell University, Ithaca, NY; Pope, *PP*, 20; Kobayashi, *Building a Rainbow*, 66; "John Washington Gilmore, Agronomy: Davis," University of California in Memoriam, <http://content.cdlib.org/xtf/view?docId=hb3779n8s1&doc.view=frames&chunk.id=div00004&toc.depth=1&toc.id> (accessed August 2008).
- ¹⁶ J. S. Schurman, letter to J.W. Gilmore, May 29, 1908, Schurman Papers.
- ¹⁷ John Mason Young collection of architectural drawings, University of Hawai'i Archives; Nellist, *Story of Hawaii and its Builders*, 913.
- ¹⁸ Author's interview with H.S. Persons.
- ¹⁹ Minutes of the Board of the College of Hawaii, University of Hawai'i Archives, August 21, 1908.

- ²⁰ Mrs. John Mason Young Oral History.
- ²¹ Malcolm S. J. Carron, *The Contract Colleges of Cornell University: A Cooperative Educational Enterprise* (Ithaca, NY: Cornell U P, 1958) 15–25; Clifford Griffin, *The University of Kansas: A History* (Lawrence, KS: The U P of Kansas, 1974) 72ff.
- ²² Second Annual Catalogue, College of Agriculture and Mechanic Arts of Hawaii, 1908–1909; Minutes of the Faculty, University of Hawai‘i Archives.
- ²³ Klein, Arthur J. (Director), *Survey of Land-Grant Colleges and Universities*, bulletin no. 9, vol. 1 (Washington DC: United States Government Printing Office, 1930) 789–809.
- ²⁴ Mann, Charles Riborg, *Carnegie Foundation for the Advancement of Teaching: A Study of Engineering Education*, bulletin no. 11 (Boston: Merrymount Press, 1918) 5.
- ²⁵ Pope, PP, 19; HAA (1909) 34; Minutes of the Board of the College, October 15, 1909.
- ²⁶ Pope, PP, 18; Willard Wilson file cards; Kobayashi, *Building a Rainbow*, 3.
- ²⁷ Report of the Board of Regents, College of Hawaii to the Legislature, in accordance with Act 24, 1907, February 17, 1909; Minutes of the Board of the College, September 24, 1908–July 15, 1909; Report of the Board of Regents, College of Hawaii to the Legislature, in accordance with Act 24, 1907, February, 1911.
- ²⁸ Catalogue, College of Agriculture and Mechanic Arts of Hawaii, 1912.
- ²⁹ Minutes of the Board of the College, August 5, 1909; Nellist, *Story of Hawaii and its Builders*, 563.
- ³⁰ Kittelson, “History of the College of Hawaii.” When *The Independent* magazine published an issue highlighting Hawai‘i in 1909, Arthur Floyd Griffiths, the president of Oahu College, as Punahou School was then called, wrote about education in the Territory. Mr. Griffiths did not even mention the existence of the College of Hawaii. Arthur Floyd Griffiths, “Educational Problems in Hawaii,” *The Independent*, vol. 67 (December 30, 1909) 1478–1483.
- ³¹ Second Annual Catalogue; Minutes of the Faculty.
- ³² J.S. Donaghho, “Reminiscences,” *Ka Palapala Hawaii*, vol. 5 (May, 1920) 21. The first session offered by the College in February 1908 had been entirely preparatory.
- ³³ Anne Young, letter to Vice President Leebrick, November. 9, 1947, Willard Wilson Papers, University of Hawai‘i Archives.
- ³⁴ Anne Young, letter to Leebrick.
- ³⁵ PCA, 28 Jan. 1912, 8.
- ³⁶ Fred Lockley, “Sigma Xis and John Mason Young,” *HSB*, 8 Jan. 1929.
- ³⁷ *The Sesquicentennial History of Associate Reformed Presbyterian Church* (Clinton, SC: General Synod, 1951) 76, 330–331; “History of Erskine College,” (Due West, SC: Erskine College Website) <http://www.erskine.edu/about-erskine/history.shtml> (visited August 2008)
- ³⁸ *Sesquicentennial History*, 331.
- ³⁹ Lockley, “Sigma Xis and John Mason Young;” Lawrence Nakatsuka, “John

Mason Young Has Left His Mark at U. of H. Campus," *HSB*, 25 June 1940, 2; "John Mason Young, Architect, Dies," *HSB*, 29 Aug. 1947. Upon Young's death, an editorial in the *HA*, 31 Aug. 31, 1947, stated: "Sincere, honest of purpose and in deeds, he gave his best to whatever service he undertook. Than that no greater praise can be given any man. For these innate qualities of true morality, he will be remembered. Hawaii has lost the presence of a builder of character among those that he taught. We have lost a true friend" (Microfiche file on John Mason Young).

⁴⁰ Louis Menand, *The Metaphysical Club* (New York: Farrar, Straus and Giroux, 2001) 80–82.

⁴¹ Mrs. John Mason Young Oral History.

⁴² Merritt, *Engineering in American Society*, 1–9. Like a minister or a teacher, the engineer was salaried. However, his status did not reside in an ecclesiastical or academic affiliation, but rather in "personal ethical standards, his learning, and his professional accomplishments" (p. 9).

⁴³ Lockley, "Sigma Xis and John Mason Young."

⁴⁴ Dale L. Walker, *The Boys of '98: Theodore Roosevelt and the Rough Riders* (New York: Tom Doherty Associates, 1998) 84–86, 134–140, 151–152; Lockley, "Sigma Xis and John Mason Young."

⁴⁵ Lockley, "Sigma Xis and John Mason Young;" Nellist, *The Story of Hawaii and its Builders*, 106–107.

⁴⁶ Mrs. John Mason Young Oral History. Charlotte Williams Conable, *Women at Cornell: The Myth of Equal Education* (Ithaca NY and London: Cornell U P, 1977). The fact that the Youngs met via a coeducational committee was noteworthy. In 1872, Cornell University became the first important eastern school to admit women. It had furthered its liberal philosophy by giving scholarships to women in 1884 and prided itself on its tradition of helping poor girls. Anne Montgomery got to Cornell with the help of an early Cornell female Ph.D. alumnus, Dr. Muir. Dr. Muir taught at Pennsylvania College for Women, where she was impressed by Anne Montgomery. Dr. Muir glowingly recommended Anne to the Cornell authorities for financial assistance. Without the scholarship, Anne could not have afforded to go to Ithaca. Although Cornell was coeducational, women were definitely second-class. The classes, fraternities, and social clubs were segregated by sex, and Cornell female students were generally disparaged. Anne Montgomery was warned "You won't be happy at Cornell. The girls aren't. They're awfully hard on coeds" (Oral History). It was probably Young's status as a graduate student that inured him to the anti-coed sentiment, thus opening him to the idea of joining a coeducational committee.

⁴⁷ Mrs. John Mason Young Oral History.

⁴⁸ *HAA*, vol. 34 (1909) 180–181; Jeannette Murray Peek, *Stepping into Time: A Guide to Honolulu's Historic Landmarks* (Honolulu: Mutual Publishing, 1994) 57, 121. This building is now the Linakona Education Center, Honolulu Academy of Arts; George F. Nellist, *The Story of Hawaii and its Builders* (Honolulu: Honolulu Star-Bulletin Ltd., 1925) 339.

- ⁴⁹ John Mason Young architectural drawings; *HAA*, vol. 35 (1910) 178; *PP*, 21 (December 1909) 57; *PCA*, 6 May 1909, 11; 5 May 1909, 6.
- ⁵⁰ Pacific Engineering Company, Ltd., Articles of Incorporation (November 12, 1909) AH.
- ⁵¹ Nellist, *Story of Hawaii and its Builders*, 838, 319; John Williams Siddall, ed. *Men of Hawaii* vol. 1 (Honolulu: Honolulu Star Bulletin, 1917) 173.
- ⁵² John Mason Young architectural drawings.
- ⁵³ "All Nations at a Harmony Banquet," *PCA*, 24 Feb. 1912, 1ff; 17 Feb. 1912, 3; 18 Feb. 1912, Section 2, 6; Nellist, *Story of Hawaii and its Builders*, 446.
- ⁵⁴ Robert Jay, *The Architecture of Charles W. Dickey: Hawaii and California* (Honolulu: U of Hawaii P, 1992) 30–33; Ray Stannard Baker, "Wonderful Hawaii," *The American Magazine*, vol. 73 (December 1911) 210; "The New Building of the Honolulu Y.M.C.A.," *PP*, vol. 22 (December 1910) 75.
- ⁵⁵ John Mason Young architectural drawings.
- ⁵⁶ "Blaisdell Hotel Is Sold for \$150,000," *HSB*, 14 Nov. 1938, 1; Nellist, *Story of Hawaii and its Builders*, 851–852.
- ⁵⁷ Lorrin A. Thurston, "Railroading in Hilo," *HAA*, vol. 39 (1914) 142–153; John B. Hungerford, *Hawaiian Railroads: A Memoir of the Common Carriers of the Fiftieth State* (Reseda, CA: Hungerford Press, 1963) 4ff; Lawrence H. Fuchs, *Hawaii Pono: "Hawaii the Excellent": An Ethnic and Political History* (Honolulu: Bess Press, 1961) 245; James B. Castle, "Benjamin F. Dillingham: An Appreciation," *HAA* vol. 45 (1919) 95–96.
- ⁵⁸ Hungerford, *Hawaiian Railroads*, 55–56; Thurston, *HAA* vol. 39 (1914) 145–149; John Mason Young architectural drawings.
- ⁵⁹ Author's interview with H.S. Persons.
- ⁶⁰ "Business Block for Honolulu," *PCA*, 18 July 1912, 1; "Pacific Engineering Project," *PCA*, 16 Aug. 1912, 8; "Better Quarters for Bank of Hawaii," *PCA*, 10 Feb. 1912, 7; "Fine Improvements Nearly Completed," *PCA*, 13 Nov. 1912, 6; Helen G. Chapin, review of *Hawaii's Early Territorial Days: Viewed from Vintage Postcards by Island Curio* by Keith Steiner, *HJH*, vol. 36 (2002) 182; John Mason Young architectural drawings; Nellist, *Story of Hawaii and its Builders*, 789–790; Pacific Engineering Annual Corporate Exhibits, 1910–1912, Hawai'i State Department of Commerce and Consumer Affairs; *PCA*, 12 July 1912, 19.
- ⁶¹ Nellist, *Story of Hawaii and its Builders*, 852; Chapin, *HJH*, 183.
- ⁶² Merritt, *Engineering in American Society*, 1–87
- ⁶³ Schurman, letter to J. W. Gilmore, January 29, 1910, Schurman Papers.
- ⁶⁴ Schurman letter, January 29, 1910, Schurman Papers.
- ⁶⁵ Minutes of the Board of the College, April 11, 1910; September 10, 1910.
- ⁶⁶ Minutes of the Board of the College, September 9, 1909.
- ⁶⁷ J.W. Gilmore, letter to the John Mason Young, May 17, 1911, Board of Regents papers, University of Hawai'i Archives.
- ⁶⁸ Pacific Engineering Corporate Exhibits, 1912–1915. According to Willard Wilson, Young told Hemenway during this time that he planned to resign (handwritten notes, Willard Wilson Papers, University of Hawaii Archives). In 1920

the Board of Regents stipulated conditions for outside employment: A full time employee must receive approval from the Board before taking up outside work during the academic year. Wilson file cards, "History of University by Years," November 4, 1920.

⁶⁹ *Annual Catalogue*, College of Hawaii, 1911–1912; Wilfred J. Holmes, *College of Engineering: A Record of its History and its Alumni*, 1982: 1.

⁷⁰ Minutes of the Faculty, University of Hawai'i Archives.

⁷¹ Nellist, *Story of Hawaii and its Builders*, 915; "Ordinance No. 33," *PCA*, 3 Feb. 1912, 12. The second person on the team has not been identified; "Building Ordinance Passed," *PCA*, 14 June 1911.

⁷² The awning gutters required in the ordinance provided breeding grounds for mosquitoes. This presented a problem for the sanitation campaign. "Building Laws Aids Mosquitoes," *PCA*, 30 Jan. 1912, 1.

⁷³ Kobayashi, *Building a Rainbow*, 10–19; Minutes of the Board of the College, December 19, 1910.

⁷⁴ Minutes of the Board of the College, May 9, 1911; May 15, 1911; May 16, 1911; J. W. Gilmore, letter to the Board of Regents, July 10, 1911, Board of Regents papers, University of Hawai'i Archives.

⁷⁵ Gilmore, letter of July 10, 1911.

⁷⁶ Gilmore, letter of July 10, 1911.

⁷⁷ Kittelson, "History of the College of Hawaii," 56.

⁷⁸ Kobayashi, *Building a Rainbow*, 10; Minutes of the Board of the College, October 2, 1911; October 4, 1911; October 5, 1911; November 16, 1911. The Main Building was renamed Hawaii Hall in 1922.

⁷⁹ Pacific Engineering Annual Corporate Exhibits, 1910 and 1911.

⁸⁰ Nellist, *Story of Hawaii and its Builders*, 603, 911–913. The firm Lord and Young was working on several major projects in Honolulu at the time: the Judiciary Building, the Library of Hawaii, and Bishop Hall Annex at Punahou School. Just before the cornerstone laying for the Main Building, Lord and Young won a large contract to construct a ten mile portion of a belt road on O'ahu linking Kipapa gulch to the top of uplands Waialua. On Hawai'i Island the company was constructing the Hilo breakwater. There were 600 workers on its payroll. Pacific Engineering and Lord and Young competed on numerous contracts. In February 1912 Pacific Engineering's bid of \$30,000 was \$4,500 more than Lord and Young's successful bid to build a two story reinforced concrete building for C. Brewer Estate ("Contract Awarded for New Building," *PCA*, 6 Feb. 1912, 7).

⁸¹ "The Passing Hour," *PCA*, 23 Jan. 1912, 4.

⁸² "Ceremonies Mark Important Step in College of Hawaii's Growth," *PCA*, 23 Jan. 1912, 1, 4; Handwritten notes on John Mason Young, Willard Wilson papers; "College of Hawaii Still a Busy Place," *PCA*, 13 July 1912, 8; "Good Year for New College in Sight," *PCA*, 17 Aug. 1912, 8.

⁸³ *Ka Palapala*, vol. 5 (1920) 24; Vaughan MacCaughey, "The College of Hawaii," *HAA* vol. 38 (1913) 100–103.

⁸⁴ Kobayashi, *Building a Rainbow*, 23; "Pearl Harbor Drydock to Be Largest in World," *PCA*, 9 Aug. 1912, 2.

⁸⁵ Schurman, letter of January 29, 1910, Schurman Papers.

⁸⁶ Kittelson "History of the College of Hawaii," 48.

⁸⁷ "John Washington Gilmore," University of California in Memoriam, <http://content.cdlib.org/xtf/view?docId=hb3779n8s1&doc.view=frames&chunk.id=div00004&toc.depth=1&toc.id> (accessed August 2008).

⁸⁸ Pacific Engineering Annual Corporate Exhibits, 1919; Nellist, *Story of Hawaii and its Builders*, 915; John Mason Young, Microfiche file, University of Hawai'i; "Young Heads Body on Non-Employment," *HSB*, 30 June 1937, 1.

⁸⁹ Nakatsuka, "John Mason Young Has Left His Mark at U. of H. Campus," *HSB*, 25 June 1940, 2.

⁹⁰ Mrs. John Mason Young Oral History.